Optics, 3 ed., p. 40); and, although comparatively little seems to be known about reflection from clouds, the phenomenon reported above is apparently consistent with previous observations: Measurements at Mount Wilson, Calif., in 1906 and 1918, of reflection from the upper level surface of fog filling the valley below (*Annals Astrophys. Obs. Smiths. Inst.*, vol. II; *Smiths. Misc. Coll.*, vol. 69, no. 10) showed that the cloud surface departed more and more from the character of a perfect matt surface the greater the zenith distance of the sun and the greater the nadir distance of the cloud; at low sun there was a marked concentration of the reflected light in the direction of specular reflection.

It may be noted that the effect of specular reflection would be much enhanced if the cloud were composed of plate-shaped ice crystals or snow flakes. Available aerological data do not indicate with certainty the conditions at the cloud level on this occasion, but in all probability the temperature was well below 0° C.

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NOTE ON THE HURRICANE OF AUGUST 5 TO 8, 1936, IN MEXICAN WEST COAST WATERS

By DEAN BLAKE

[Weather Bureau, San Diego, Calif. March 1937]

There are two points in connection with the tropical hurricane of August 5–8, 1936, briefly described on pages 277–278 of the MONTHLY WEATHER REVIEW for August, 1936, which deserve emphasis: (1) the pronounced tropical properties of the attendant air mass; and (2) the movement of the storm in relation to the prevailing air motions aloft over Southwestern United States.

It is generally agreed that the unusually squally weather over southern California on August 8 was caused by the unstable air mass that attended the storm. This particular phenomenon, however, has been discussed in detail by Ward in the November 1936 *Bulletin* of the American Meteorological Society, and no further description here seems necessary.

The disturbance probably formed about 100 miles southwest of Manzanillo, or near lat. 18° N. and long. 106° W., whence it moved northward over the Gulf of California, and dissipated in southern California.

The deep tropical origin of the air is borne out by the aerographical sounding made at 6 a. m. (P. S. T.), August 8, or about the time the air mass began to overspread Southwestern United States. This sounding showed abnormally high equivalent potential temperatures (Θ_E), and specific humidities (q), especially in the lower levels. Comparisons with the average yearly values for equatorial air over Batavia, (lat. 6° S.), taken from chart V. A., page 90, of Willett's American Air Mass Properties, and with the values for summer over Pensacola, as found on page 65 of the same publication are given below.

During its short life the hurricane took a course northward along the Mexican coast, thence up the Gulf of California, and disappeared from surface maps on the 7th. That the air mass went much farther as unstable air aloft, and caused thunderstorms over the plateaux and even over the northern Rocky Mountains, for several days thereafter, is evidenced by the weather maps for the next few days.

	San Diego		Batavia		Pensacola	
	Θ_E	q	Θ_E	q	Θ_E	q
Surf	336	15.2	349	17.8	359	20.7
1 km	348	13.0	341	13.2	350	15.6
2 km	345	11.3	336	9.4	345	12.5
3 km	343	10.0	334	7.1	341	9.5
4 km	339	7.7	334	5.3	----------	----------
5 km	335	5.0	334	3.7	----------	----------

In a recent paper, West Coast Mexican Cyclones (Monthly Weather Review, December 1935), the writer ventured the opinion that to forecast the paths of these tropical disturbances is a matter of correctly anticipating directions of upper air motions over the area they are likely to traverse. The movement of this hurricane certainly justifies this conclusion.

Winds aloft over southwestern United States during the life of the disturbance were from an easterly or southerly direction—part of the vast upper-level anticyclonic whirl common to this region in the summer—and they corresponded very closely to the direction of travel of the storm. Even after the vortex was no longer discernible at the surface, the remaining unstable air mass was carried northward almost to the Canadian border by this circulation.

NOTES AND REVIEWS

Charles F. Brooks, A. J. Connor, et al. *Climatic Maps of North America*. Published by the Blue Hill Observatory at the Harvard University Press, Cambridge, Mass., 1936.

This publication comprises the maps which are included (on a smaller scale) in the Köppen-Geiger *Handbuch der Klimatologie*, vol. II, part J, The Climates of North America, by R. DeC. Ward, C. F. Brooks, and A. J. Connor. The base maps are of size 43 by 56 cm, the same size as those on which the data were originally plotted. Detailed climatic data for the entire continent of North America, as well as Greenland and the Caribbean region, are presented in this manner for the first time.

The original data for the United States, Mexico, Alaska, and the West Indies were adjusted to 30.44 day (one-twelfth year) "months"; expressed in terms of degrees centigrade and millimeters; and, for six temperature and two pressure maps, reduced to sea level.

Seven elements are represented: temperature, pressure, rainfall, snowfall, humidity, cloudiness, and thunderstorms. Temperature and precipitation maps make up 19 of the 26 maps.

The temperature maps comprise the following: (1) Six sea-level monthly mean temperature maps for alternate months beginning with January; the values were obtained by adding 0.5° C. for every 100 m of altitude above sea-level to the actual normal temperature; by this device distinctive features of temperature distribution are brought out (such as the chinook warmth of Montana as compared to the continental coldness of North Dakota) which are usually masked in ordinary temperature maps. (2) *Actual* mean temperature distributions for January and July. (3) The mean annual range of temperature; this element brings the regions of equable temperature into contrast with those of temperature extremes. (4) The mean values of the annual maximum and the annual

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